

Exhibit 7

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

T-Mobile USA, Inc., AT&T Services Inc., AT&T Mobility LLC, AT&T Corporation, Cellco Partnership d/b/a Verizon Wireless, Nokia of America Corporation, Ericsson Inc.
Petitioners

v.

Cobblestone Wireless LLC
Patent Owner

Case IPR2023-00136
Patent 8,891,347

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,891,347**

Inter Partes Review of U.S. Patent No. 8,891,347

Thus, Sesia discloses and/or renders obvious “performing a channel estimation based on the first signal to obtain path parameter information of the first propagation path,” as recited in Claim 1 under either Patent Owner’s apparent interpretation or the plain and ordinary meaning of the term.

[1.4] sending the channel estimation that includes the path parameter information from the receiver to the transmitter via the first propagation path;

Sesia discloses and/or renders obvious “sending the channel estimation that includes the path parameter information from the receiver to the transmitter via the first propagation path.” Ex. 1005, ¶¶138-45.

As discussed above with respect to claim element [1.3], Sesia discloses performing a channel estimate on a reference signal to obtain channel estimate information or path parameter information, which is then provided to the transmitter (*i.e.*, the base station) as feedback (either explicit or implicit). Ex. 1003 at 271-72 and 662-63; Ex. 1005, ¶139.

In addition, Mr. Proctor explains that Sesia provides examples where the channel state information is transmitted to the eNodeB as feedback (either explicitly or implicitly) for subsequent data scheduling and transmissions. Ex. 1005, ¶140. As an example, Sesia discloses that a UE may transmit a Channel Quality Indicator (CQI) as feedback to an eNodeB, which is then used by the eNodeB for selecting a modulation scheme and/or code rate. Ex. 1003 at 215; Ex. 1005, ¶140. In another example, Sesia discloses that the UE may provide channel state information for

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transmit beamforming and MIMO precoding. Ex. 1003 at 263; Ex. 1005, ¶140. In yet another example, Sesia discloses the UE may provide PMI feedback to the eNodeB to help the eNodeB with deriving beamforming precoding weights. Ex. 1003 at 271-72; Ex. 1005, ¶140. Sesia also discloses that the scheduling algorithms used by the eNodeB can make use of measurement information which can include Channel State Information (CSI) and traffic measures (*e.g.*, volume and priority). Ex. 1003 at 280; Ex. 1005, ¶141.

Each of these disclosures show how channel estimation information is sent from the receiver to the transmitter after the receiver performs channel estimation for use in subsequent transmissions. Ex. 1005, ¶142. Furthermore, Sesia explicitly states that the “LTE specifications are designed to provide signaling necessary for the interoperability between the eNodeB and UEs so that the eNodeB can optimize the link adaptation.” Ex. 1003 at 215-16. As such, a POSITA would understand that the channel estimates are necessarily sent back to the base stations. Ex. 1005, ¶¶142-43.

In addition, Sesia discloses the use of a time division duplexing (TDD) scheme in wireless communications. *See* Ex. 1003 at 147, Figure 6.2; Ex. 1005, ¶144. In said TDD schemes, signals are transmitted at the same frequencies meaning that the uplink signals from the UE are sent using the same frequencies along the same path as the first sent downlink reference signals. *See* Ex. 1003 at 147, Figure

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6.2; Ex. 1005, ¶144. As such, a POSITA would understand that the alleged channel estimates are sent along the same path by reciprocity.⁴ *See* Ex. 1005, ¶144.

Accordingly, a POSITA would understand Sesia to disclose that, after obtaining the channel estimate information or path parameter information, the UE transmits a signal, including the channel estimate information to the eNodeB along the propagation path that exists between the transmitter and the receiver. Ex. 1005, ¶145.

Thus, Sesia discloses and/or renders obvious “sending the channel estimation that includes the path parameter information from the receiver to the transmitter via the first propagation path,” as recited in Claim 1.

[1.5] predistorting a second signal at the transmitter in a time domain, a frequency domain, and a spatial domain, according to the channel estimation based on the first signal;

Sesia discloses and/or renders obvious “predistorting a second signal at the transmitter in a time domain, a frequency domain, and a spatial domain, according

⁴ This reciprocity concept is similar to what the Patent Owner is currently pointing to in its infringement contentions in the related district court proceedings. Ex. 1007 at 8 (“In at least TDD mode . . . the uplink transmission uses the same propagation path (*via reciprocity*) as the downlink transmission.”) (emphasis added); *see also* Ex. 1009 at 8; Ex. 1010 at 8.

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invalid. For example, none of the grounds asserted herein were previously considered by either the Office or the district courts. *Cf. Comcast Cable Comm'n's, LLC v. Rovi Guides, Inc.*, IPR2019-00231, Paper 14 at 11 (PTAB May 20, 2019) (obviousness challenges not “previously considered by the Office or any court” weigh in favor of not denying institution). Moreover, the '347 Patent is currently asserted in a district court case. Institution of this IPR provides the opportunity for narrowing and simplifying the litigations for the district court.

Compelling Merits – Finally, discretionary denial is not warranted because this petition presents compelling evidence of unpatentability. Ex. 1012 at 2. Sesia presents compelling invalidity arguments with clear disclosures of the allegedly novel aspects of the Challenged Claims, particularly in light of Patent Owner's apparent interpretation of the claims.

Accordingly, the Board should decline to exercise its discretion under *Fintiv* and institute trial.

XII. CONCLUSION

For the reasons provided above, *inter partes* review of claims 1-4, 6-12, 14-17, and 19-23 of U.S. Patent No. 8,891,347 is requested.

Dated: December 4, 2023

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned Petition for *Inter Partes* Review of U.S. Patent No. 8,891,347 specified in 37 C.F.R. § 42.24 have **13,614** words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(a)(1)(i). This word count was prepared using Microsoft Word 2010.

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CERTIFICATION OF SERVICE (37 C.F.R. §§ 42.6(e), 42.105(a))

The undersigned hereby certifies that true and correct copies of the above-captioned **PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,891,347**, all associated exhibits, and Petitioner's Power of Attorney were served in their entireties on December 4, 2023, upon the following parties via FedEx® Express:

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